

REMARKS

Claims 1-25 are pending in the application and claims 1-6 and 20-23 are allowed. The Applicants' attorney has amended claims 7-19, and has added new claims 24-25. As discussed below, all of the claims are now in condition for allowance. If after considering this response the Examiner still does not believe that all of the claims are allowable, he is requested to schedule an interview with the Applicants' attorney before issuing another office action.

Rejection of Claim 17 Under 35 U.S.C. § 112, Second Paragraph

To overcome this rejection, The Applicants' attorney has amended claim 17 to recite ". . . varying the phase of the second signal relative to the phase of the reference signal comprises incrementing the phase of the second signal relative to the phase of the ~~second~~first signal."

Rejection of Claims 7, 12, 14, and 16-17 Under 35 U.S.C. § 102(b) As Being Anticipated By U.S. Patent 5,550,514 to Liedberg

Claim 7

Claim 7 as amended recites a signal generator operable to generate from a reference signal having a reference frequency a signal having a frequency that is different from the reference frequency.

For example, referring to, e.g., FIGS. 1-2 and paragraphs [25] – [35] of the patent application, a control circuit 13 and a delay means 11 generate from a reference signal CLK_{ref} during a first operational mode (when the selection signal Φ_M equals logic 0) a signal S_1 having a frequency that is different from the frequency f_{ref} of the reference signal CLK_{ref} . In the embodiment discussed in conjunction with FIG. 2, the frequency of S_1 during the first operational mode equals $0.8f_{ref}$.

In contrast, Liedberg does not disclose generating from a reference signal a signal having a frequency that is different from the frequency of the reference signal. Referring to, e.g., FIG. 3 and col. 4, line 7 – col. 5, line 30, Liedberg discloses a crystal

oscillator 2, which generates a local signal having a frequency — for purposes of this analysis, Liedberg's local signal corresponds to the claimed reference signal — and discloses variable delays 10 and 11, which generate from the local signal respective first and second signals that are phase shifted relative to the local signal. But unlike the claimed signal, which has a frequency that is different than the frequency of the reference signal, Liedberg's first and second signals from the delays 10 and 11 have the same frequency as the local signal from the oscillator 2 (see col. 4, lines 17-19).

Claims 12 and 14

Claims 12 and 14 as amended are patentable over Liedberg for reasons similar to those discussed above in support of the patentability of claim 7.

Claim 16

Claim 16 as amended recites varying a phase of a signal relative to a phase of a reference signal, the signal having an average frequency that is different from the frequency of the reference signal.

In contrast, referring to, e.g., FIG. 3 and col. 4, line 7 – col. 5, line 30, Liedberg's variable delays 10 and 11 generate respective first and second signals that have the same frequency, and thus the same average frequency, as the local signal generated by the oscillator 2 (see col. 4, lines 17-19).

Claim 17

Claim 17 as amended recites incrementing the phase of a first signal relative to the phase of a second signal.

For example, referring to, e.g., FIGS. 1-2 and paragraphs [25] – [35] of the patent application, a control circuit 13 and a delay means 11 increment the phase of a first signal S1 relative to the phase of a second signal S2 during a first operational mode (when the selection signal Φ_M equals logic 0). In one embodiment, where T is the

period of a reference signal CLK_{ref} and of S2 during the first operational mode, the circuit 13 and delay means 11 increment the phase of the first signal S1 relative to the second signal S2 by $T/4$ each cycle of S2.

In contrast, Liedberg does not disclose incrementing the phase of a first signal relative to the phase of a second signal. Referring to, e.g., FIG. 3 and col. 5, lines 5 – 10, a first signal generated by Liedberg's delay 10 has a constant phase (for example, 2π), not an incrementing phase, relative to the phase of a second signal generated by Liedberg's delay 11.

CONCLUSION

In view of the foregoing, in addition to the allowed claims 1-6 and 20-23, claims 7-19 as amended and new claims 24-25 are in condition for allowance, which is respectfully requested.

In the event additional fees are due as a result of this amendment, payment for those fees has been enclosed in the form of a check. Should further payment be required to cover such fees you are hereby authorized to charge such payment to Deposit Account No. 07-1897.

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Respectfully submitted,

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